

REMARKS

Claims 1 – 15 are pending in the application. Applicants amend claim 1, and cancel claims 8 – 15 without prejudice or disclaimer. No new matter is added. Applicants reserve all rights to file one or more continuing applications based on one or more of canceled claims 8 – 15 at a later date in time.

REJECTION UNDER 35. U.S.C. §§ 102, 103

Claims 1 – 5, 7 and 9 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,750,022 to Curry. Claims 11 and 13 - 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Curry al. Claims 6, 8, 10 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Curry in view of U.S. Patent No. 6,385,773 to Schwartzman. Applicants cancel claims 8 – 15 without prejudice or disclaimer, amend claim 1 to further clarify the nature of their invention, and respectfully traverse these rejections.

In independent claim 1, Applicants disclose:

1. A system for reducing noise in a signal line, through which upward signals and downward signals are transmitted between a center and terminals, comprising:

a noise-reduction device, provided between the center and the terminals, which detects a noise increase regarding the upward signals on the signal line to generate a control signal indicative of the noise increase, and is triggered by said control signal to attenuate the upward signals by an increased amount; and

a noise-control device, provided at the terminals, which boosts a transmission level of the upward signals by an amount compensating for the attenuation of the upward signals by said noise-reduction device.

In a Response of January 24, 2004, Applicants provided the following arguments as to the Curry reference:

Curry discloses a two-way cable TV system directed to reducing the effects of noise and interference in the upstream transmission path (see, e.g., FIG. 1 of

Curry). Noise measuring equipment 25 is provided in headend 13 for monitoring the upstream transmissions. When noise is detected, LPC 16 in headend 13 enters a search mode, sequentially sending messages to command each of phantom subscribers 29, 29, 87 to selectively open and close associated switches in order to isolate sources of noise on associated trunk lines (see, e.g., column 9, line 1 through 57 of Curry). Once a noise source is thereby isolated, LPC 16 sends a command to the line control unit immediately upstream of the noise source instructing the line unit to boost its gain, and sends a command to the line control unit immediately downstream from the noise source to attenuate the signal on its upstream transmission path. In this manner, the signal associated with the noise source may be attenuated while the level of the desired upstream signal is maintained.

Applicants' claim a noise-reduction device positioned between a center (headend) device and a plurality of terminals that detects an increase in noise in upward signals on the upstream transmission path, and directly attenuates the upward signals by an increased amount in response to the noise increase. At each of the terminals, a noise-control device is provided to boost a transmission level of its upward signals by a corresponding amount to compensate for the attenuation of the upward signals by the noise-reduction device.

In the system as disclosed by Applicants, in sharp contrast to Curry, there is no need for a device at the headend to first locate and isolate the source of noise by an extensive search operation and then control line control units to eliminate the noise source. Rather, Applicants' claimed noise control device simply detects an increase in noise, and takes necessary action directly to reduce the noise by attenuating upward signals. As a result, the need for the noise source isolation and control means as taught by Curry is avoided.

Applicants' claimed noise-reduction units provided at the terminals boost transmission levels to offset the noise sources, which are primarily located at the terminal ends. Thus, unlike the system of Curry, each node of Applicant's system need not be equipped with a noise-reduction device, a noise-control device and associated isolation and control means.

The Examiner found these arguments to be unpersuasive, suggesting that Applicants attempted to distinguish their invention from the system of Curry without making explicit reference to associated claim limitations. Applicants provide additional amendments to claim 1 and additional arguments to clarify those distinctions relevant to patentability.

In amended claim 1, Applicants claim a system for reducing noise in a signal line that includes a noise-reduction device having the following limitations. The noise-reduction device is provided between the center and the terminals, which detects a noise increase regarding the

upward signals on the signal line to generate a control signal indicative of the noise increase, and is triggered by said control signal to attenuate the upward signals by an increased amount.

In other words, the noise-reduction device, provided on the upstream transmission path, functions both to detect noise and to attenuate the upstream signal in order to reduce the detected noise. As explained in Applicants' Response of January 24, Applicants' claimed noise-detection device represents an improvement over the system of Curry, which provides a first device at the headend to first locate and isolate the source of noise by an extensive search operation, and then instructs a second set of devices (control line control units) to eliminate the noise source. In sharp contrast to the system of Curry, with Applicants' claimed noise-detection device, there is no need to instruct a search operation to isolate a noise source and to instruct a separate and distinct noise-reduction device to control the noise. Rather, Applicants' claimed noise-detection device directly detects a noise increase in an upward signal, and also attenuates the signal in order to reduce the noise.

Applicants' claimed system also includes a noise-control device having the following limitations. Applicants' noise-control device is provided at the terminals, and boosts a transmission level of the upward signals in the terminals by an amount compensating for the attenuation of the upward signals by the noise-reduction device. By way of contrast, the system of Curry provides a control unit immediately upstream of a noise source for amplifying a signal. As in the case of Applicants' claimed noise-reduction device neither Curry nor any of the other cited references teach Applicants' claimed noise-control device provided at the terminals.

Applicants note that confluence noise (such as is addressed in the present application) is known to be generated by noises that get into subscriber in-house lines located at the ends of CATV transmission lines arrayed in a tree structure, and are combined together further upstream. Under the presence of these noises, it becomes more effective to amplify a signal transmitted to

an in-house line than to amplify the signal at a later stage after noises from multiple in-house lines are combined

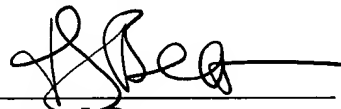
Accordingly, Applicants respectfully submit that independent claim 1 is not anticipated by Curry, and are therefore in condition for allowance. As claims 2 - 7 each depend from allowable claim 1, Applicants respectfully submit that claims 2 - 7 are also allowable for at least this reason.

CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1 - 7, consisting of independent claim 1 and the claims dependent therefrom, are in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,



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